

A new monoplacophoran (Mollusca) from southern New Zealand

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Abstract

Micropilina rakiura n.sp. is described from southern New Zealand, the second monoplacophoran known from the western Pacific. One specimen appears to have been parasitised by a boring foraminiferan, a new record for the Monoplacophora.

Key words: Mollusca, Monoplacophora, *Micropilina*, new species, Foraminifera, parasite, New Zealand.

Introduction

A new species of monoplacophoran, described herein, is the second Recent member of the class to have been found in the New Zealand region. The only other Recent monoplacophoran known from the entire western Pacific is *Micropilina tangaroa* Marshall, 1990, based on a single shell from the northern Three Kings Rise, northern New Zealand (Marshall, 1990). The present species brings to 24 the number of recorded Recent monoplacophorans (Warén & Gofas, 1997). The material is housed at the Museum of New Zealand Te Papa Tongarewa, Wellington (NMNZ).

Systematics

Family MICROPILINIDAE Haszprunar & Schaefer, 1997

Genus *Micropilina* Warén, 1989

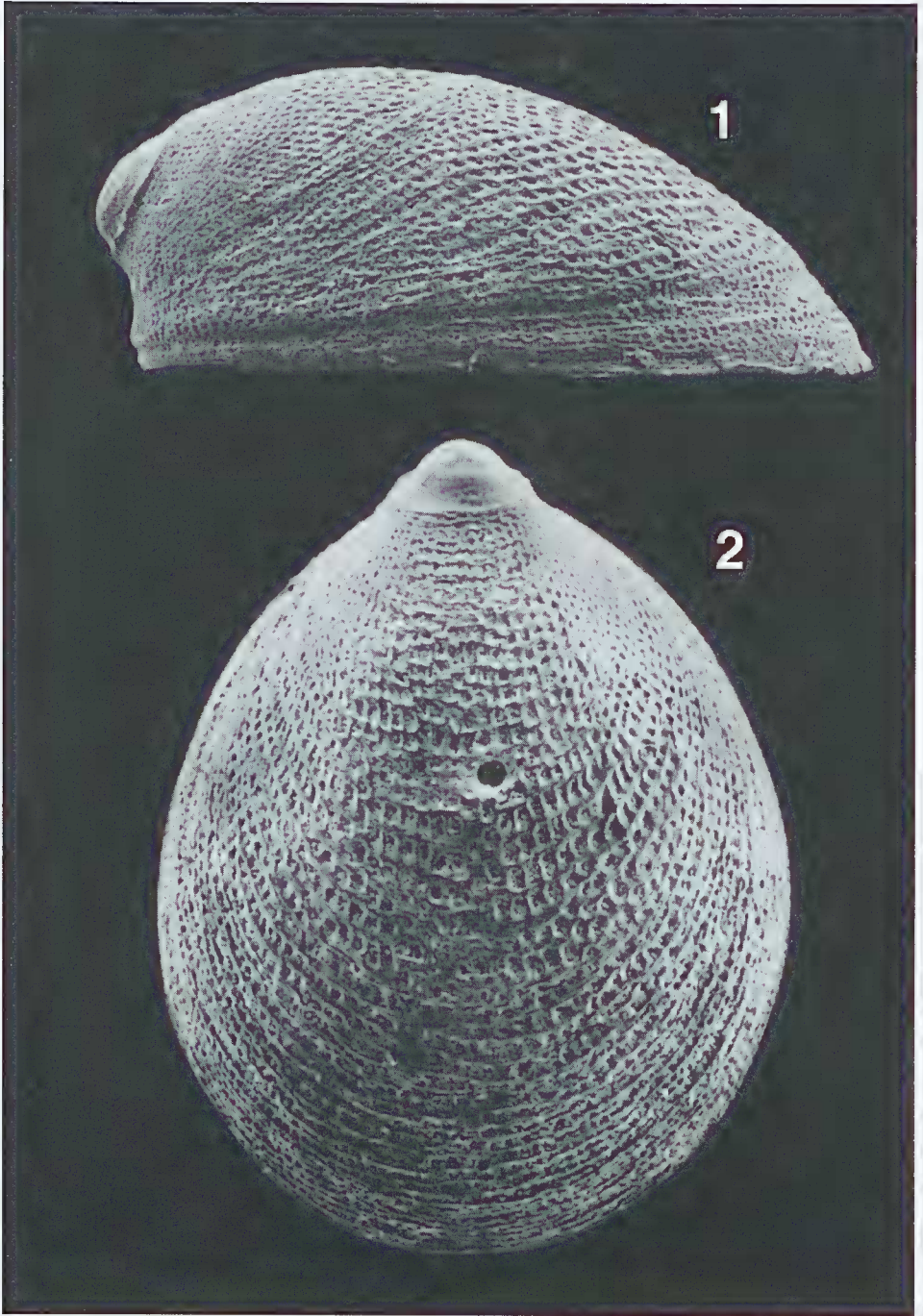
Micropilina Warén, 1989: 2.

Type species (by original designation): *Micropilina minuta* Warén, 1989; Recent, northern Atlantic.

Remarks: *Micropilina* anatomy has been described by Haszprunar & Schaefer (1997a,b) who (1997b) transferred *Micropilina* from Neopilinidae to a new family, Micropilinidae. The family-group classifications proposed by Moskalev *et al.* (1983) and Starobogatov & Moskalev (1987) are considered to be too finely split (Warén & Bouchet, 1990; Warén & Hain, 1992; Warén & Gofas, 1997).

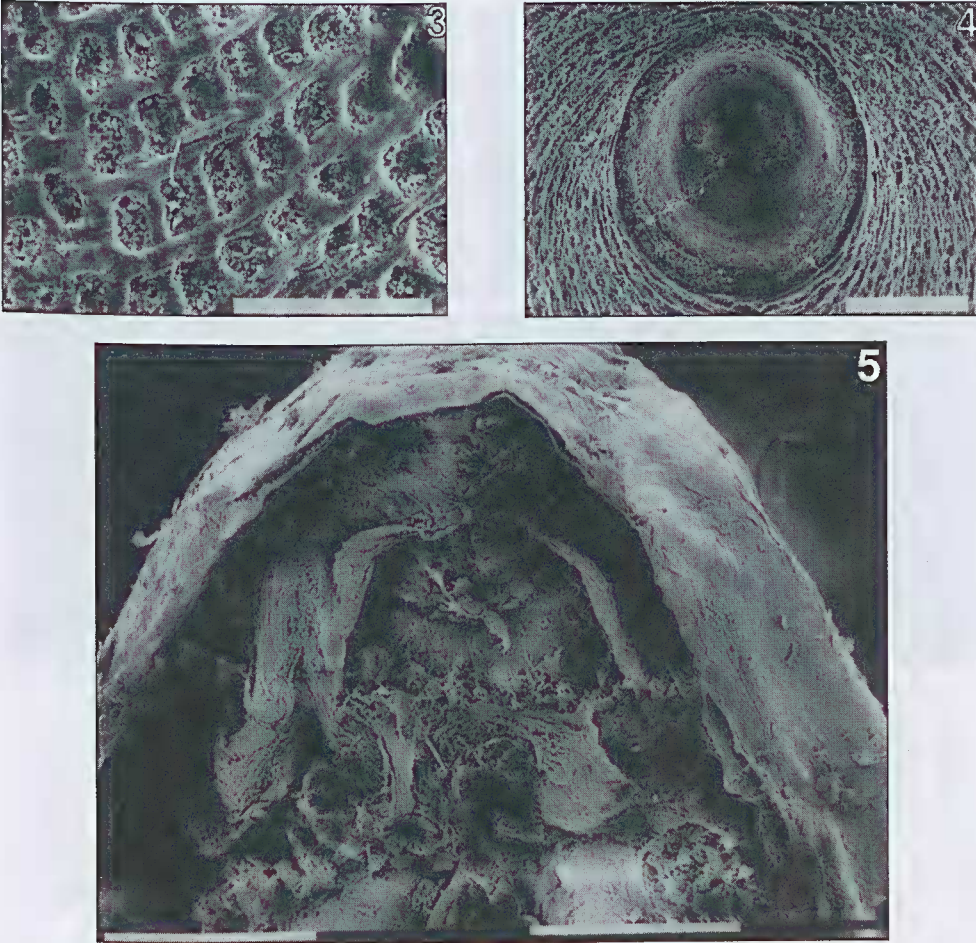
Micropilina rakiura n. sp.
(Figures 1-9)

Description: Shell (Figs 1-4) up to 1.25 mm long, thin, fragile, strongly arched capuliform; apertural margin ovate, posterior margin more broadly rounded



Figures 1, 2.

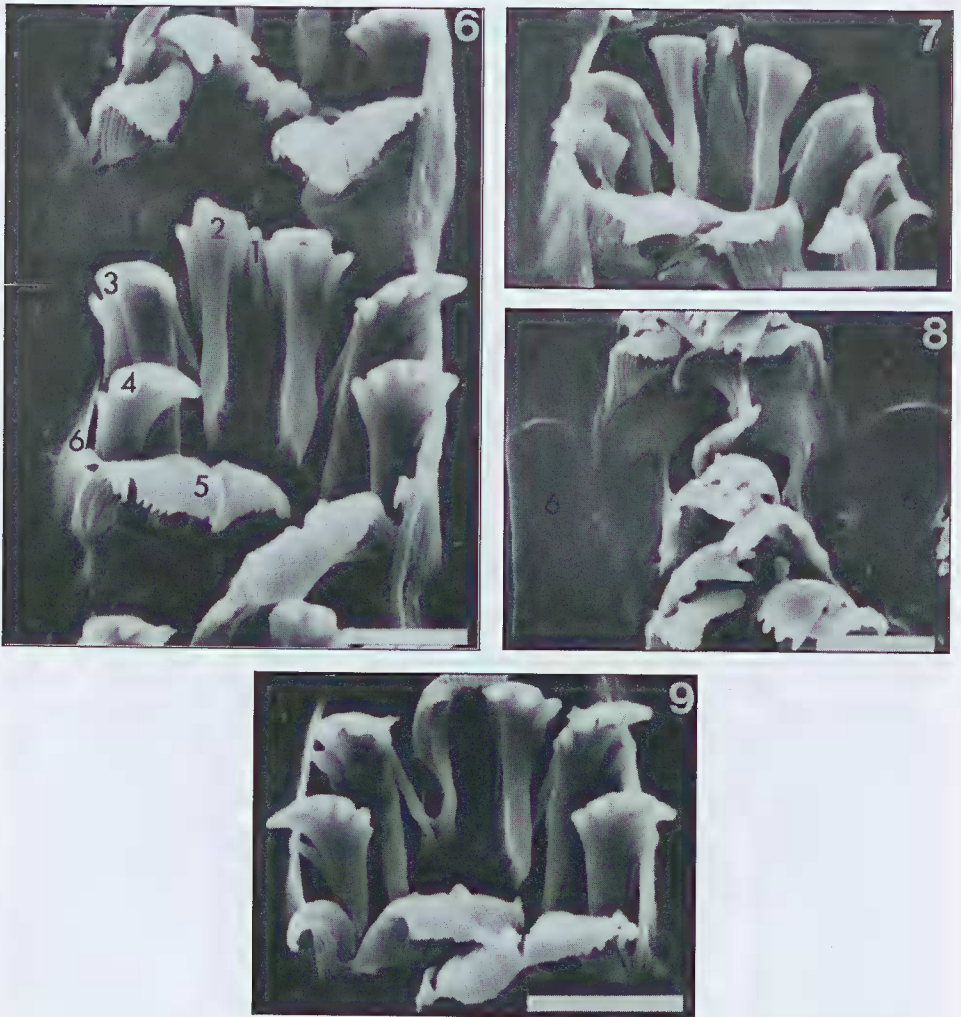
Micropilina rakiura: side (1) and dorsal (2) views of shell of holotype of (1.20 × 0.95 mm). The hole in the shell (Figure 2) was revealed after removal of an attached living foraminiferan.



Figures 3 - 5.

Micropilina rakiura. 3. Detail of teleoconch sculpture on dorsal surface at about mid shell length of holotype. 4. Plan view of apical area of holotype. 5. Oral area of critical point dried animal of paratype (NMNZ M.118896) (all animals partly dehydrated during freezer storage prior to receipt). Scales = 100 μm .

than anterior, profile concave from side to side; rounded apex projecting slightly beyond anterior apertural margin, translucent, colourless, no hexagonal prismatic structure. Apical area convex, 230 μm long, defined by sharp ridge, essentially smooth. Outside of apical area sculptured with fine, crisp, irregularly dislocated, similar, concentric and radial threads that enclose roundly quadrate spaces, interspaces wider than each thread. Interior smooth, polished. Animal (Fig. 5) poorly preserved. Radula (Figs 6-9) with 11 teeth per transverse row (consecutively numbered outwards). Central tooth long and narrow, thickened shaft face tapered to curved terminal cusp, hooded behind, edges of shaft face laterally flanged to interlock with adjacent teeth. Teeth 2-4 similar, long, stronger than central tooth, respectively with 3, 5 and 6 stout conical cusps, shafts laterally flanged and grooved to interlock with adjacent teeth. Tooth 5 broad,



Figures 6 - 9.

Micropilina rakiura, details of radula of holotype. Individual tooth elements numbered 1 - 6. Note worn tips on teeth 2 and 3 in Figure 7. Scales = 10 μ m.

distal half deeply divided and fan-like with 20-25 long slender cusps. Tooth 6 about as long as inner teeth, subrectangular, thin in section, tip bluntly rounded.

Type data: Holotype (M.131609: length 1.20 mm, width 0.95 mm, height 0.47 mm) and 5 paratypes (M.118896) Museum of New Zealand, Wellington: 47°18.17'S, 165°49.9'E, "Mount Duncan", Puysegur Bank, south of Puysegur Point, Southland, New Zealand, living on clump of dead, manganese encrusted, branching coral (*Goniocorella* sp.), with a few, small attached living sponges and an octocoral, 896-1038 m, 16 October 1994, f.r.v. *Tangaroa* station 9409/78, M. Clark and D. Tracey.

Distribution: South of Puysegur Point, Southland, New Zealand, 896-1038 m (alive).

Remarks: *Micropilina rakiura* is the fourth known species of *Micropilina*: the others are *M. minuta* Warén, 1989 (Iceland, 770-926 m), *M. tangaroa* Marshall, 1990 (Three Kings Rise, northern New Zealand, 1216-1385 m), and *M. arntzi* Warén & Hain, 1992 (Lazarev Sea, Antarctica, 191-765 m). *M. rakiura* differs from *M. tangaroa* by having concentric riblets that are similar to the radials instead of much stronger, from *M. minuta* by having a much more openly reticulate sculpture, and from *M. arntzi* by having strong reticulate sculpture instead of much finer concentric sculpture. The radula of *M. rakiura* is similar to that of *M. arntzi*, but differs in the number of cusps on teeth 2-4 and in the shape and larger size of tooth 6. Regrettably all of the animals of *M. rakiura* had been dehydrated by prolonged freezing (received frozen), though what can be seen of the gross external anatomy resembles that in *M. arntzi* (Fig. 3, cf. Warén & Hain, 1992, fig. 17, 18).

The specimens of *M. rakiura* were sorted from residue washed from a block of dead, manganese encrusted coral (*Goniocorella* sp.), and were undoubtedly living attached to the coral. The type specimens of *M. arntzi*, the only other species to have been taken alive, were attached to stones or sorted from residues from samples that included stones and megafauna. The diet of *Micropilina* species is unknown, though like species of *Laevipilina* McLean, 1979, which also live on hard substrata, they are probably detritivores (McLean, 1979; Warén & Bouchet, 1990; Urgorri & Troncoso, 1994).

The holotype had a live foraminiferan (width 380 μm) attached to the exterior of its dorsum, removal of which revealed a minute perforation in the monoplacophoran's shell (Fig. 2), suggesting parasitism. The identity of the foraminiferan (regrettably lost) is unknown, though it was not unlike *Hyrrokkina sarcophaga* Cedhagen, 1994, at least superficially. Cedhagen (1994) has reviewed parasitism and boring by foraminiferans.

Etymology: *Rakiura* is the Maori name for Stewart Island, which is adjacent to the type locality and has a southern connotation.

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